DRAFT

TUCSON AMA SAFE-YIELD TASK FORCE
ISSUE OUTLINE
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ISSUE: CENTRAL ARIZONA GROUNDWATER REPLENISHMENT DISTRICT

The Central Arizona Groundwater Replenishment District (CAGRD) was established to replenish excess groundwater used by municipal providers with designations of Assured Water Supply and certificated new subdivisions served by undesignated providers. The CAGRD must satisfy its replenishment obligations by recharging in the same AMA as the excess groundwater pumping. This replenishment is not required to be within the area of hydrologic impact of the pumping and may take three full years. The CAGRD is required to develop a 20-year plan of operation, but enrollment in the CAGRD serves as proof of compliance with the State's management goals for 100 years. The CAGRD is not required to own rights to a long-term water supply.

BACKGROUND

The Assured Water Supply Rules require that all new municipal subdivisions rely primarily on renewable supplies. To accomplish this, water providers can choose to apply for an Assured Water Supply (AWS) designation that allows them to serve new subdivisions within their service areas. If a provider chooses not to seek a designation, developers of new subdivisions are required to obtain a certificate of AWS. One way that providers and developers can prove that renewable supplies will be used is to join the CAGRD. The CAGRD recharges renewable water supplies to replace the excess groundwater that is used by member service areas (designated providers) and member lands (certificated subdivisions). Currently in the Tucson AMA, all designated providers and certificated subdivisions have enrolled in the CAGRD to comply with the "consistency with the AMA's management goal" provision of the AWS Rules. However, they are also required to comply with the remaining requirements of the AWS Rules, including proof of physical availability.

CAGRD member service areas are designated water providers. This means the water providers must either use renewable supplies directly, recharge renewable supplies to offset their groundwater use, or pay the CAGRD to replenish most of the groundwater used in their service areas. All of the customers of designated providers must pay for renewable supplies, not just those in new subdivisions. In contrast, subdivisions that become member lands of the CAGRD are served by providers that do not have designations. This means that the remaining customers of those undesignated providers continue to mine groundwater, creating an equity issue within the municipal sector.

Because the CAGRD is allowed to replenish anywhere within the AMA, there may be no direct hydrologic connection between the groundwater pumpage and the replenishment. Recharge facilities are not available within most municipal service areas and infrastructure does not exist to transport renewable supplies to the outlying portions of the metropolitan areas for replenishment or direct use. This may contribute to physical availability problems over time.

The CAGRD may be causing undesirable growth patterns, by allowing new growth outside of areas with direct access to renewable supplies. It may actually be "stealing" potential customers from the designated providers, by providing a low-cost mechanism of meeting the "consistency with the

management goal" AWS criteria without developing the infrastructure to deliver renewable supplies. This may result in urban sprawl or satellite communities that have inadequate services.

The drafters of the Code also anticipated that urban growth would occur on land with agricultural water rights, causing early retirement of agriculture. The AWS rules in combination with the CAGRD have resulted in there being almost no incentive to develop agricultural land.

Another problem involving the CAGRD is that currently, several designated providers are recharging their own renewable supplies for recovery in later years. Recovery can generally occur anywhere within the same AMA as the recharge with the issuance of a recovery well permit. Permitting of recovery wells is governed by criteria defined in the management plan. In the Second Management Plan, the main criterion was that recovery must be from "an area experiencing a long term average annual rate of decline that is less than four feet per year." This criterion can be met by most designated providers. In the Third Management Plan (TMP) more limiting criteria were proposed that would further restrict recovery in areas of water level declines. However, if the recovery criteria are made more stringent in the TMP, designated providers could simply forgo recharging and recovering their own water and rely on the CAGRD to replenish the water for them. This would allow them to avoid the recovery criteria.

The final issue is the CAGRD's long-term water supply. In the short-term, unused entitlements and surplus Colorado River supplies provide an opportunity to bring additional CAP water supplies into the AMA beyond existing allocations. Each year the Secretary of the Interior evaluates the Colorado River water supply and determines if it is a normal, surplus, or shortage water year. Unused entitlements (either surplus supplies or subcontracted water that is not ordered and used) can be contracted to other users on an annual basis. This is the supply upon which the CAGRD currently relies. These unused entitlements are a temporary resource, because as the Colorado River becomes more heavily utilized, less excess water will be available. Recent projections indicate that shortages on the Colorado River could begin occurring by 2025. Because the CAP has a relatively low priority right to Colorado River water, the CAP's full entitlement may not be available in shortage years. The CAGRD is not required to show the water supplies it intends to use to meet its long-term obligations beyond the 20 year plan of operation.

SOLUTIONS CONSIDERED

The following ideas have been considered. Additional ideas may be added to this list.

- Require replenishment within the member service areas/lands; possibly include differential pricing.
- Require replenishment at a ratio greater than 1:1 unless replenishment is done within the provider's service area or the member land, even if at a greater cost.
- Change the AWS Rules' physical availability criterion from 1000' depth to water to match the management plans' recovery criterion (currently less than four feet of average annual water level decline) for new certificates or combine the requirements.
- Require the CAGRD to do long-term supply planning and enact legislation if new mechanisms are needed to show what supplies it plans to use in its long-term plan.
- Urge the CAGRD to investigate alternatives for funding acquisition of long-term water rights, including CAP contracts.
- Recommend strengthening the CAGRD's Plan of Operation requirements to ensure full evaluation of costs and benefits of supply options and assessment of replenishment obligation.

- The CAWCD should evaluate a change in the law that protects existing customers from dramatic price increases due to the CAGRD's need to invest in new supplies and infrastructure to serve new customers. Water supplies in the future are likely to be significantly more expensive than supplies being served to existing customers. A provision for the incremental cost to be paid by the new users should be instituted.
- Require all municipal pumping to meet AWS criteria.
- Revise the CAGRD statutes to require recharge in advance, with groundwater pumping by its customers subject to management plan recovery criteria.
- Strengthen the hydrologic analysis criteria for CAGRD members during the initial evaluation of physical availability.
- Institute an alert level on groundwater declines for member lands in areas served by undesignated providers. This should trigger a requirement for the responsible provider to develop physical access to renewable supplies, or at least an evaluation of alternatives available.

PRELIMINARY RECOMMENDATIONS

- CAGRD replenishment near wells serving member service areas/lands, or in locations that meet the AMA's management objectives should be encouraged or required. Replenishing at a ratio of greater than 1:1 should be considered if replenishment occurs elsewhere.
- Recovery of stored credits is subject to recovery criteria in the TMP, while pumpage of groundwater that is subsequently replenished by the CAGRD is not. In order to address this issue, the drawdown criteria in the TMP that are currently applied to recovery of credits should be applied to groundwater pumpage that is replenished by the CAGRD. *
- An alert level based on groundwater declines should be instituted for undesignated providers serving member lands. This should trigger actions by the water provider to ensure a long-term renewable supply.
- A more rigorous long-term planning and water supply acquisition plan should be required from CAGRD. This plan should identify funding alternatives for acquisition of long-term water rights such as CAP contracts, costs and benefits of supply options, and assessment of the ability to meet the maximum replenishment obligations over time.
- If at some point in the future, new demand causes the CAGRD to invest in new supplies and infrastructure that are significantly more expensive than supplies being served to existing customers, provisions for the incremental cost to be paid by the new users should be instituted through legislation.

OBSERVATIONS

Very serious equity issues result from creating a requirement to replenish within a provider's service area when it is distant from the CAP canal. Such a requirement is also likely to increase the cost of maintaining an assured water supply. Solutions to this problem may involve construction of infrastructure, but it is unlikely that sufficient infrastructure can be built in the short term to bring renewable supplies to all developing areas of the AMA. Phasing in the requirements to match infrastructure development may be an option. If this is not done, it is unclear who will be responsible if a provider located far from the canal begins to experience physical availability problems. In the case of built-out subdivisions, using the trigger point of declining water levels to require use of renewable supplies may be a good compromise.

In implementing the recommendations, issues that should be addressed include implications of the CAGRD acquiring long-term CAP contracts: 1) potential for competition between the CAGRD and municipal entities who are looking for increased renewable supplies, and 2) costs associated with the contracts for future capacity being passed on to current members of the CAGRD. If all municipal entities are required to use renewable supplies, there will be more competition for water.

Requiring the CAGRD to replenish within its member service areas/lands would certainly require extensive changes to the existing statutes, especially relating to replenishment assessments. It may be better to encourage replenishment in certain areas rather than require it as there may be times when it would be more advantageous for the CAGRD to replenish outside the member's boundaries.

There are concerns about equity within the municipal sector, in particular the fact that designated providers shoulder a disproportionate amount of the costs of the Assured Water Supply Program. Evaluation of water supply options and changes in CAGRD statutes or policies should carefully weigh relative impacts on designated versus undesignated providers. Changing the AWS rules will result in some equity issues.

* Alternatively, the AWS Rules' physical availability criteria should be changed for designated providers who are pumping groundwater that is replenished by the CAGRD. Instead of a maximum depth to water over 100 years of 1000 feet, for such providers it should be four feet per year times 100 years, or 400 feet lower than current average water levels. CAGRD member service areas that continue to depend on groundwater for their physical availability would lose their designation if the average decline rate in their wellfields exceeds 4 feet per year. In the case of member lands, if the rate of groundwater level decline exceeds 4 feet per year in the wells serving the development at the time of initial application for subdivision AWS, certificates would not be issued.